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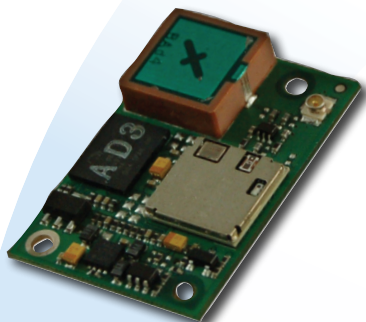
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# 802.11b/g Wireless LAN Serial Module and Device Server



Laird Technologies' WISMC01 Wireless LAN Processor Modules are the world's most compact, feature-rich solutions for designers needing to add wireless connectivity to their products. With fully integrated drivers and stacks, this complete stand-alone, pre-qualified wireless solution requires minimum development to implement connectivity to any embedded product.

The WISM range of modules offered by Laird Technologies are not simply Wireless LAN modules, but complete wireless processor systems capable of stand-alone operation. The dual-processor design supports an intelligent scripting language that simplifies the management of the radio control and operation, including full 802.11b/g drivers and protocols. They also contain a fully embedded TCP/IP stack and web server that provides dynamic information to an Internet application anywhere in the World.

To simplify the development of wireless LAN applications, Laird Technologies created UWScript--a language designed to feel much like the BASIC language. Functionality is enhanced with a range of wireless specific tokens to bring simplicity to embedded wireless communication. This isolates users from the complexity of the wireless connection by providing high-level abstract commands. Complete functions, such as finding and connecting with access points or sending email, are provided as script libraries. These can be cut and pasted to produce complete working programs in a matter of hours. Using the sample UWScripts supplied with the Laird Technologies range of WISM modules, development of 802.11 Wireless LAN becomes a simple development task. Developers can also access a command line interface, a web configuration tool and a comprehensive set of AT commands.

## FEATURES AND BENEFITS

- Complete serial Wireless LAN module
- Integrated drivers and TCP/IP stack
- Full 802.11b/g support
- Dual processor design
- Programmable web server
- Interpreter for local application support
- 16MB flash memory
- Integrated multilayer ceramic antenna
- Excellent range
- 921kbps data throughput
- Infrastructure and ad-hoc modes
- Full encryption – WEP, WPA2 personal and enterprise
- Optimised for low-power operation
- Fast connection times
- BASIC scripting language
- UART interface
  - 12 x GPIO and 2 x ADC
  - Bluetooth coexistence support
  - AT Command interface and web configuration

## APPLICATION AREAS

- Wireless M2M Applications
- Embedded Wireless Connectivity
- ePOS
- Medical Equipment
- Telematics
- Metering Applications
- Automotive Applications
- Street Furniture
- Industrial Automation

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# WISMC01

## 802.11b/g Wireless LAN Serial Module and Device Server

CATEGORIES	FEATURE	IMPLEMENTATION
<b>Wireless Specification</b>	Standards Supported	IEEE 802.11b, IEEE 802.11g
	Frequency	2.412 – 2.484 GHz
	Channels	11 channels – USA 13 channels – Europe 4 channels – France (EIRP > 10mW outdoors) 14 channels – Japan <i>Programmable selection of region</i>
	Max Transmit Power	802.11b: +15 dBm @ antenna connector 802.11b: +17 dBm from integrated antenna 802.11g: +13 dBm @ antenna connector 802.11g: +15 dBm from integrated antenna
	Receive Sensitivity	802.11b: -91dBm @ 1 Mbps, -84dBm @ 11Mbps 802.11g: -84dBm @ 6Mbps, -67dBm @ 54Mbps
	Range	50 metres
	Data Rates	54Mbps – 1Mbps with automatic fallback
	Data Transfer Rate	Up to 921.6kbps
	Modulation Schemes	802.11b – BPSK, QPSK, CCK, DSSS 802.11g – BPSK, QPSK, 16-QAM, 64-QAM, OFDM
	Connection Modes	Infrastructure and ad-hoc (IBSS)
<b>Antenna Modes</b>	Integrated Antenna	High performance +2dB multilayer ceramic
	External Antenna	50 Ohm U.FL connection
	Antenna Diversity	Supported using integrated and external antennae
<b>UART Interface</b>	Serial Interface	RS-232 bi-directional for commands and data 16550 compatible
	Baud Rate	Configurable from 9,600 to 921,600bps
	Bits	7
	Parity	Odd, even, none
	Stop bits	1
	Default Serial parameters	115200,n,8,1
	Levels	3.0V CMOS
	Modem Control	DTR, DSR, DCD, RI, RTS, CTS †
<b>General Purpose Inter-</b>	I/O	12 general purpose I/O pins, 3.0V CMOS†
	ADC	2 ADC inputs. 10 bit, 3.0V max
<b>Security</b>		Open Connection WEP encryption 64 and 128 bit options WPA-PSK WPA2 Enterprise & Personal IEEE 802.11i-PSK (AES-CCMP) TKIP Encryption SSL2 / SSL3 / TLS1 Hardware Acceleration for security features
<b>Protocols</b>	Network Drivers	802.11b, 802.11g
	Internet	IPv4, TCP, UDP, DHCP Client, DNS Client, ARP, HTTP Server

†DSR, DTR, RI and DCD are configurable either as GPIO or as modem control lines.

# WISMC01

## 802.11b/g Wireless LAN Serial Module and Device Server

CATEGORIES	FEATURE	IMPLEMENTATION
<b>Web Server</b>	Features	Serves web pages from the module Runs standard user generated HTTP web pages Provides access to I/O and ADC status Serves Dynamic Content from UWScripts Accepts POST inputs for control of scripts Allows dynamic control of ports
	Website Capacity	128kBytes **
<b>Power Consumption</b>	Powersave modes	IEEE Powersave Modes 0,1,5 & 6
	Current Consumption	Less than 250mA during data transfer with a configurable low power mode less than 5mA
<b>Supply Voltage</b>	Supply	3.3V – 5.0V DC
	Regulation	On-board regulators, brown-out detection and
<b>Embedded Wireless Processor System</b>	Specification	ARM7 with 16Mb SRAM and 64Mb Flash
	Scripting Interpreter	Runs UWScript Fully featured scripting language with wireless exten-
	Data Filing System	User accessible
	Script Capacity	128kBytes **
	Auto-run	Optional Automatic script execution at power on
	WLAN functions	Search, Attach, Detach, Security, Region, etc.
	Upgradeability	Firmware upgradeable via UART
<b>Configuration</b>		UW Script AT Command Interface Command Line Interface Web Configuration via 802.11 ad-hoc connection.
<b>Coexistence / Compatibility</b>	Bluetooth	2-wire and 3-wire hardware coexistence schemes supported
<b>Connections</b>	Interface	40 way Hirose DF-12 Connector
	External Antenna	U.FL connector for 50 Ohm antenna
<b>Physical</b>	Dimensions	22.8mm x 33.8mm x 7.6mm
	Weight	8 grams
<b>Environmental</b>	Operating Temperature	Low Power Mode: -40°C to +85°C Continuous transmission: -40°C to +60°C Minimum cold start temperature: -25°C

\*\* Shared memory space for scripts and web content

# 802.11b/g Wireless LAN Serial Module and Device Server

CATEGORIES	FEATURE	IMPLEMENTATION
	Storage Temperature	-50°C to +125°C
<b>Approvals</b>	FCC	Modular Approval PI405W
	IC	Industry Canada
	CE & R&TTE	Approved
<b>Miscellaneous</b>	Lead free	Lead-free and RoHS compliant
	Warranty	2 Years
<b>Development Tools</b>	Development Kit	Development board and software tools
	UWTerminal	Free downloadable terminal emulator
	UWScript Library	Free example scripts for a wide range of applications

## ORDERING INFORMATION

WISMC01BI	802.11b/g wireless LAN serial module with 40 pin connector
WISMC04BI	802.11b/g wireless LAN serial module with 50 pin connector (Siemens MC55 compatible)
WISDK01BI	Development Kit for WISMC01BI with module

Visit [www.lairdtech.com/wireless](http://www.lairdtech.com/wireless) for details on our full range of wireless products, as well as extensive range of white papers and applications notes.

The details contained within the document are subject to change. Download the product specification from [www.lairdtech.com/wireless](http://www.lairdtech.com/wireless) for the most current specification.

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